

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

WDR ORDER NO. 96-058

UPDATED WASTE DISCHARGE REQUIREMENTS FOR

SIERRA POINT DEVELOPMENT COMPANY, THE CITY OF BRISBANE, SIERRA POINT ASSOCIATES ONE, SIERRA POINT ASSOCIATES TWO, HITACHI AMERICA LTD., TUNTEX PROPERTIES INC., AND ARGENTUM INTERNATIONAL, INC.
SIERRA POINT CLASS III SOLID WASTE DISPOSAL SITE
BRISBANE, SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

SITE DESCRIPTION:

1. Sierra Point Associates One & Two (joint ventures of The Koll Sierra Point Partners One and Koll Sierra Point Partners Two respectively, and New England Mutual Life Insurance Company), Hitachi America Ltd., Tuntex Properties Inc., Argentum International Inc., and the City of Brisbane, own an inactive municipal solid waste disposal site referred to as the Sierra Point Solid Waste Disposal Site. The Sierra Point Development Company was a former owner of the site. The aforementioned parties are collectively referred to hereinafter as the dischargers.
2. The Sierra Point Solid Waste Disposal Site is located in the City of Brisbane, San Mateo County, as shown in Figure 1, which is incorporated herein and made part of this Order. The site encompasses an area of approximately 131 acres, of which 29 acres are located in the City of South San Francisco and 102 acres are located in the City of Brisbane. The site does not have a formal street address and is bounded to the north, south and east by waters of San Francisco Bay and to the west by James Lick Bay Shore Freeway (U.S. Highway 101), and Southern Pacific Transportation Company (SPTC) railroad tracks.

PURPOSE OF ORDER UPDATE:

3. The primary purposes of this Order are the following:
 - (1) To update the site's groundwater, and leachate monitoring points and discharge monitoring program;
 - (2) to incorporate the requirements of the General Industrial Stormwater Runoff program;
 - (3) to establish an inward gradient to prevent offsite leachate migration;

- (4) to protect shoreline stability and to prevent waste exposure to the Bay water;
- (5) to bring the site into full compliance with the current requirements of Chapter 15 of the California Code of Regulations.

SITE HISTORY:

4. The landfill operated between 1965 and 1972, and was used for the disposal of solid wastes. Prior to 1965, the existing Sierra Point Disposal Site was a mud flat which extended from the Bay westward to near the present foot of San Bruno Mountain. Development of the landfill began with construction of an earthen dike by the Easley and Brassy Company for the Sunset Scavenger Company between the years of 1965 and 1967. During those years an earthen dike was built around the north, east, and south borders of the landfill. The west border of the site is formed by earlier fill materials and an outcropping San Bruno Mountain. Once the dikes were constructed, the interior of the site was dewatered prior to any waste placement. Consistent with landfill practices at that time, no liner was installed at the site. Instead the waste materials, which consisted of a combination of household waste, rubble, and clean soils were placed directly onto the Younger Bay Mud.
5. Sierra Point Development Company purchased the site in 1975 from the landfill operator (Sunset Scavenger) and sold it to Sierra Point Associates Two (SPA2) in November 1983. Since then, SPA2 has sold several parcels to Hitachi America Ltd., Tuntex Properties Inc., Argentum International Inc., and Sierra Point Associates One, but remains the majority owner. In about 1980, Sierra Point Development Company donated approximately 20 acres of the former Sierra Point Landfill to the City of Brisbane for a marina. Sunset Scavenger, the former landfill operator, by correspondence dated April 3, 1996 has indicated that they currently are a California Corporation and a wholly-owned subsidiary of Norcal Waste Systems, Inc. Further documents will be submitted to the Board. Therefore, the Board reserves its jurisdiction to amend this Order to include Sunset, if appropriate, to a future date.
6. The current owners are responsible for compliance with this Order regarding discharge of waste from their respective parcels which they own and control, and are jointly responsible for overall site maintenance.

Provision C4 of Order No. 82-27 which contains closure requirements for Sierra Point Development Company and the City of Brisbane reads: The Board considers the current property owners and of any new owner to have a continuing responsibility for correcting any problems associated with this solid waste disposal site during subsequent use of the landfill for other purposes.

SITE CONSTRUCTION HISTORY:

7. The operation of the landfill conformed with regulations existing in the late 1960s and early 1970s. Waste containment was consistent with practices in the industry at that time. Waste disposal design features such as liners, cellular division of waste, and leachate collection systems were not installed. In the early 1960's, construction of dikes around the landfill was initiated. The dikes were constructed by successive dumping of large quantities of fill directly on top of the Bay Mud. The perimeter dikes were built in phases with the first phase being the Brisbane portion of the landfill. During the second phase of dike construction, the southern portion of the project site (within the limit of the City of South San Francisco) was completed.
8. In 1981, a soil-bentonite slurry cut-off wall along the northern portion of the western property boundary was installed. The purpose of the slurry wall installation was to prevent lateral migration (seepage) of leachate off site and to minimize water infiltration from runoff from Highway 101 and San Bruno Mountain into the facility. The southern end of this wall was keyed to the basement outcrop of the bedrock (Franciscan Formation). It continues in a northerly direction, along the drainage channel, and is keyed into the dike at the north end of the project site. The elevation of the trench excavation bottom varies from approximately 3 feet (MSL) to approximately 12 feet (MSL). Predominantly bedrock and Bay Mud were encountered at the trench excavation bottom. The estimated coefficient of permeability of the slurry wall ranged from 2.7×10^{-8} cm/sec to 6.88×10^{-8} cm/sec.
9. In 1982, approximately three to four feet of new fill was placed along the shoreline to raise the perimeter to about elevation 8 MSL. However this improvement did not prevent a January 1994 storm from causing significant shoreline erosion which resulted from wave action.
10. The developed portions of the landfill includes stormwater collection systems. These systems have been installed concurrent to the site development.

SITE DISPOSAL HISTORY:

11. During 1966-1967, the construction of dikes around the landfill was completed and the site was dewatered. Beginning sometime in 1967 or 1968, the site began to accept waste materials. Refuse was placed in two lifts. Cover material was transported to the site from the Candlestick Park area on a daily basis to cover the refuse. Limited information regarding the composition of waste disposed of at the site is available. The waste disposed of at the site is estimated to about 60% residential and 40% commercial. No liquids or hazardous wastes are reported to have been disposed of at the landfill. Estimates of volume of waste range from the 1.9 to 2.6 million cubic yards and the total area used for disposal of waste disposal was approximately 80 acres of which 70 acres are capped. Disposal of waste at the Sierra Point Landfill was terminated once the Mountain View Landfill was opened in about 1971.

SITE CLOSURE DETAILS:

12. On June 16, 1982, the Board adopted Order No. 82-27 which contained closure requirements for Sierra Point Development Company and the City of Brisbane.
13. According to the Solid Waste Assessment Test Report (SWAT), more than 70 acres of the site have been capped to date. The cap was placed in stages as site development occurred. The cap consisted of 3 feet of clean soil and includes at least 1 foot of compacted, low permeability, clayey soils. The clay cap is keyed into the dike. Additionally, several feet (up to 10 feet) of soil was placed in some areas to complete grading for surface drainage. Also, to further limit the infiltration of water into the landfill, asphalt pavement was installed in the developed areas, and undeveloped areas were planted with grass.

REGIONAL HYDROGEOLOGY:

14. The major surface water runoff sources located in the vicinity of the site is the Guadalupe Valley Drainage, located approximately one mile northwest of the site. The sources of this drainage are located on higher elevation slopes of San Bruno Mountain. Runoff flows into San Francisco Bay via the Guadalupe Lagoon and Guadalupe Canal located approximately 0.5 miles north-northwest of the Sierra Point Landfill. As runoff enters the channel and flows toward the Bay, aquifer recharge may occur through infiltration of surface water.
15. Potential aquifer recharge at the Sierra Point Landfill is further constrained by the drainage ditch and slurry wall, located along the northern portion of the western property boundary, and compacted soils under the Freeway.
16. Local surface drainage near the site is from the southeastern flank of San Bruno Mountain and the urbanized/industrialized northern and eastern area of Oyster Point. Some fraction of surface water falling in these areas can be expected to recharge groundwater beneath the site.
17. Investigation has shown that the landfill's monitoring wells are hydraulically connected with San Francisco Bay water.
18. A vertical hydraulic gradient is generally upward with an average potential head difference of +6.12 to -1.47 feet at locations where shallow and deep groundwater monitoring well pairs are installed. The only location where a downward vertical gradient was noted was at the northeast corner of the site (MW-5A/MW-B6).
19. The shallow and deep groundwater contours indicate a general flow direction from the landfill interior towards San Francisco Bay.

LOCAL GEOLOGIC CONDITIONS:

20. Locally, the site lies on the western shores of San Francisco Bay on reclaimed bay lands at the eastern base of San Bruno Mountain. The site itself is a relatively flat lying area with an average elevation of about 20 feet above sea level. The site overlies a depression in the bedrock which is overlain by natural sedimentary deposits consisting of Old Bay Mud, alluvial sands and gravel, and Younger Bay Mud. Overlying these natural deposits are man-made artificial fill materials consisting of soil and refuse. Bedrock is exposed near the western side of the project site near the base of San Bruno Mountain.
21. Directly beneath the perimeter dikes and the refuse material is a natural sedimentary deposit known as Younger Bay Mud. It has been found that the Younger Bay Mud extends to depths of approximately 75 to 110 feet below ground surface with a thickness ranging from 45 to 86 feet. The Younger Bay Mud is a dark greenish-grey, highly plastic silty clay. The consistency of Younger Bay Mud varies from soft to medium stiff, and stiffness generally increases with depth. Bay Mud is marine deposit of compressible silty clay or clayey silt which contains considerable amounts of organic materials and may also contain lenses of shell, silt, and sand. The composition of the Younger Bay Mud includes mica, montmorillonite, chlorite, kaolinite, quartz and feldspar.
22. In many places beneath the Younger Bay Mud layers are deposits consisting of a bluish-grey, stiff to very stiff silty clay, called Old Bay Mud. The Younger Bay Mud and Old Bay Mud may, however, be separated by discontinuous layers of coarse-grained materials or bedrock may directly underlay the Younger Bay Mud. The properties of the Younger Bay Mud differ from the Old Bay Mud. The Younger Bay Mud unit is under-consolidated to normally consolidated, very soft to medium stiff, and highly compressible, whereas the Old Bay Mud unit is typically over-consolidated, medium to very stiff, and only slightly compressible. In some areas, the thickness of Younger Bay Mud is highly variable due to erosion of the bedrock surface and/or irregularities on the top of the underlying bedrock.
23. The Sierra Point Landfill, along with much of the San Francisco Bay Area, is dominated seismically by the active San Andreas Fault system. With respect to the Sierra Point Landfill, the San Andreas Fault is located approximately 4 miles to the west, the Hayward Fault is located approximately 14 miles to the east, and the Calaveras Fault is located approximately 24 miles to the east. These faults are all considered active and capable of producing significant intensities and durations of ground shaking at the site. Several small faults, including the City College Fault and the Fort Point Fault are located approximately one mile northeast of the site, respectively. The facility is not within an Alquist-Priolo special studies zone, and no active shear zones are known to exist at this facility. The regional faulting system is shown in Figure 2.

BENEFICIAL USES:

24. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

The potential beneficial uses of San Francisco Bay surrounding the landfill are:

- a. Navigation
- b. Commercial and sports fishing
- c. Water contact recreation
- d. Wildlife Habitat
- e. Marine habitat
- f. Shellfish harvesting
- g. Preservation of rare and endangered species.

MONITORING PROGRAM:

25. An existing network of 5 deep groundwater monitoring wells (MW-3B, MW-6B, MW-8B, MW-10B, MW-12B), 8 shallow groundwater monitoring wells (MW-1A, MW-2A, MW-4A, MW-5A, MW-7A, MW-9A, MW-11A, MW-13A), two surface water monitoring points (SW1 and SW2), three nested leachate wells (L2/L7, L3/L5, L4/L6) and one single (independent) leachate well (L1) monitor groundwater and leachate within the landfill perimeter. No upgradient well has been identified in this monitoring network.
26. This landfill was formerly classified as a Class II-2 facility, and pursuant to the 1984 revisions of Chapter 15 is now classified as a Class III facility. The dischargers submitted a Solid Waste Assessment Test Report (SWAT) for the site which has been approved. The SWAT analytical results indicated that the site was leaking Benzene and 1,4 Dichlorobenzene at concentration above the Department of Health Services' action levels into the waters of the State. The SWAT report for this facility is approved. The beneficial uses of the shallow groundwater are restricted in that natural groundwater quality is poor and can not be used as drinking water source. An evaluation of any potential benefit for corrective action shall be based on the results of the revised self monitoring plan, attachment A & B.

27. Federal Regulations [40 Code of Federal Regulations (CFR) Parts 122, 123, and 124] require specific categories of industrial activities, including landfills, to obtain a NPDES permit for storm water discharges. The State Water Resources Control Board has issued a General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES Permit No. CAS000001). This facility is subject to these requirements. Pursuant to the Stormwater Discharge Program, this facility is required to submit a Notice of Intent for coverage under the General Permit; to prepare and implement a monitoring program; and to submit an annual report. Compliance with the monitoring and reporting requirements of this Order are intended to assure compliance with the requirements of the General Permit.

CALIFORNIA ENVIRONMENTAL QUALITY ACT:

28. This action is exempt from the provisions of the California Environmental Quality Act pursuant to Section 15308, Title 14 of the California Code of Regulations.
29. Sanitary landfills could potentially impact groundwater if not properly designed maintain and/or operated. Groundwater can also be affected by water that percolates through waste materials and extracts or dissolves substances from it and carries them into the groundwater.
30. No solid waste has been disposed of at this site since its closure to public in 1971, and the site is considered an inactive facility.
31. The Board has notified the dischargers and interested agencies and persons of its intent to prescribe updated waste discharge requirements for the discharge, and has provided them with an opportunity to submit their written views and recommendations.
32. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the dischargers, their agents, successors and assigns shall meet the applicable provisions contained in Division 3, Title 23, Chapter 15 of the California Code of Regulations, and Division 7 of California Water Code, and shall comply with the following:

A. PROHIBITIONS

1. Wastes shall not be in contact with ponded water.
2. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or of the United States.
3. The site is regulated as an inactive closed facility. Therefore, no additional wastes of any origin or type shall be allowed to be deposited or stored within or upon this site.
4. The dischargers, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

a. Surface Waters

1. Floating, suspended, or deposited macroscopic particulate matter or foam.
2. Bottom deposits or aquatic growth.
3. Adversely alter temperature, turbidity, or apparent color beyond natural background levels.
4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Groundwater

The groundwater shall not be degraded as a result of the waste maintained at the facility.

B. SPECIFICATIONS

1. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.
2. The site shall be protected from any washout or erosion of wastes from inundation which could occur as a result of a 100-year 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.
3. The dischargers shall assure that the foundation of the site, the refuse fill, and the structures which control leachate, surface drainage, erosion and gas for this site are constructed and maintained to withstand conditions generated during the maximum probable earthquake.
4. An interim cap (temporary) shall be in place over the portion of the landfill that is not closed or developed. A slope of less than 3% but at least 1%, shall be permitted for the interim cap provided that the following minimum conditions are met:
 1. The existing cover must be compacted to attain at least 90 percent of its relative maximum density as defined by ASTM D1557;
 2. the permeability of the compacted material must meet regulatory requirements of less than 10⁻⁶cm/sec.

5. The dischargers shall maintain and monitor the waste unit so as not to cause a statistically significant difference to exist between water quality parameters at the compliance point and Water Quality Protection Standards as defined in Section 2550.2 of Article 5. The point of compliance as per Section 2550.5, Article 5 of Chapter 15 is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit.
6. In the event of a release of a constituent of concern beyond the Point of Compliance, the site will begin a Compliance Period pursuant to Section 2550.6(a) of Chapter 15. During the Compliance Period, the dischargers shall perform an Evaluation Monitoring Program and a Corrective Action Program.
7. The dischargers shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any Discharge Monitoring Program issued by the Executive Officer.
8. Methane and other landfill gases shall be adequately monitored in the developed and undeveloped portions of the landfill. If the monitoring devices indicate methane gas build up, the dischargers are then required to vent and remove (extract) the generated gas from the landfill units, to control and minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration.. A Re-evaluation of a gas monitoring system requirements may be performed for the next scheduled update of this Order.
9. The dischargers shall maintain all devices or designed features, installed in accordance with this Order, such that they continue to operate as intended without interruption as provided for by the performance standards adopted by the California Integrated Waste Management Board.
10. The dischargers shall provide and maintain a minimum of two permanent surveyed monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the post-closure and maintenance periods. These monuments shall be installed by a licensed land surveyor or registered civil engineer.

C. PROVISIONS:

1. The dischargers shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order and as provided below.
2. The dischargers shall submit a detailed Post Earthquake Inspection and Corrective Action Plan acceptable to the Executive Officer to be implemented in the event of any earthquake generating ground shaking of Richter Magnitude 7 or greater at or within 30 miles of the landfill. The report shall describe the containment features, and ground water monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the landfill. The plan shall provide for reporting results of the post earthquake inspection to the Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the landfill structures, the corrective action plan shall be implemented and this Board shall be notified of any damage.

NOTIFICATION: IMMEDIATELY
REPORT DUE DATE: WITHIN THREE MONTHS OF
ADOPTION OF THIS ORDER

3. The dischargers shall submit a Contingency Plan to be instituted in the event of a leak or spill from the leachate facilities. The dischargers shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board, the Local Enforcement Agency (LEA), and the California Department of Toxic Substances Control. The dischargers shall initiate its corrective action plan to stop and contain the migration of pollutants from the site.

NOTIFICATION: IMMEDIATELY
REPORT DUE DATE: WITHIN 7 DAYS AFTER THE
INCIDENT

4. The reports pursuant to these Provisions shall be prepared under the supervision of a registered civil engineer, registered geologist, or California certified engineering geologist.
5. The dischargers shall comply with the Self Monitoring Program which is attached to and made part of this order and/or any amendments thereafter.
6. The dischargers shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

NOTIFICATION: IMMEDIATELY
REPORT DUE DATE: WITHIN 7 DAYS AFTER THE
INCIDENT

7. The dischargers shall prepare, implement and submit a Storm Water Pollution Prevention Plan in accordance with requirements specified in State Water Resources Control Board General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES Permit No. CAS000001).

REPORT DUE DATE: July 1, 1996

8. In the event of settlement which threatens to allow ponding of water or exposure of waste, the dischargers shall reconstruct the settled portions of the landfill's cap.
9. In the event of release of leachate from the waste unit into the environment, the dischargers shall develop and implement a leachate management plan. This plan must include detailed information regarding leachate collection, recovery, treatment and disposal system. The implementation of this plan shall prevent leachate migration offsite.

REPORT DUE DATE: WITHIN 60 DAYS FROM EVENT

10. The dischargers shall maintain a copy of this Order at its office with the environmental compliance staff who are responsible for related operation of this site.
11. This Board considers the property owners and site operators to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the post-closure maintenance period.
12. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Dischargers, the Dischargers shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. (Refer to Standard Provisions referenced above). The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contract with the Board and a statement. The statement shall comply with the signatory paragraph described in Standard Provisions and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.
13. The dischargers shall permit the Board or its authorized representative, upon presentation of credentials:
 - a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any treatment equipment, monitoring equipment, or

monitoring method required by this Order or by any other California State Agency.

d. Sampling of any discharge or ground water governed by this Order.

14. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.
15. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.
16. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications and Provisions of this Order, shall also be provided to the Environmental Health Services Division of San Mateo County.
17. This Order rescinds WDR Order No. 82-27.
18. The shoreline protection project, which is intended to protect the landfill's toe berm against erosion and destruction resulting from wave action, must be implemented upon approval by the involved agencies. The dischargers shall submit technical reports upon completion of the project to include as-built plans and Construction Quality Assurance (CQA) documents.

REPORT DUE DATE: October 1, 1996

19. The dischargers must reconstruct and/or regrade those existing portions of the landfill's cap which are not closed properly and do not meet the requirements of Article 8, Chapter 15, Title 23 of the California Code of Regulations. Construction and/or regrading must be accomplished to meet the following specifications:

An interim cap with a thickness of at least one foot shall be placed over the portions of the landfill that are not closed properly. A slope of less than 3% but at least 1%, shall be permitted for the interim cap provided that the following minimum conditions are met:

1. The cap must be compacted to attain at least 90 percent of its relative maximum density as defined by ASTM D1557; and
2. The permeability of the compacted material must meet regulatory requirements of less than 10^{-6} cm/sec.

REPORT DUE DATE: July 15, 1996

20. Installation of Two Additional Leachate Wells.

The dischargers are required to submit a technical report, acceptable to the Executive Officer, that documents that the leachate monitoring wells LW-1 and LW-2 as listed in Table No. 1 Part B of the attached Self Monitoring Program have been installed. Based on site topography and site development, the dischargers may adjust the installation location of the two leachate wells within the western boundary of waste (parcel 1 and parcel 2).

REPORT DUE DATE: August 1, 1996

21. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure which threatens the integrity of containment feature or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.

NOTIFICATION: IMMEDIATELY
REPORT DUE DATE: WITHIN 7 DAYS AFTER THE INCIDENT

22. The dischargers are required to monitor leachate buildup over time and implement a leachate management plan, acceptable to Executive Officer, to contain leachate within the waste management unit. Upon the detection of leachate buildup within the waste unit, a leachate collection, extraction, disposal systems must be installed. The implementation of this plan must establish an inward leachate gradient.

REPORT DUE DATE: WITHIN 90 DAYS OF
CONFIRMED LEACHATE
BUILDUP

23. The dischargers shall maintain the facility so as to prevent a statistically significant increase in water quality parameters at the point of compliance as provided in Section 2550.5. According to Sections 2550.2 and 2550.3 of Chapter 15, the dischargers is also required to establish a Water Quality Protection Standards (WQPS) and a list of Constituents of Concern (COCs) . The dischargers shall meet the following schedule in implementing the requirements of this Provision. The dischargers shall monitor a minimum of four quarters (one year) for the parameters listed in Table 2. Based upon the results of the monitoring, the dischargers shall propose a revised list of COC's and monitoring parameters in accordance with the requirements of this Order and Article 5 of Chapter 15. Within 15 months following the adoption of this Order, the dischargers shall submit a monitoring program to include a statistical analysis method to the Board for approval by the Executive Officer. A non statistical method (e.g., concentration trend analysis and comparison to practical quantitation limits) will be utilized to evaluate the significance of groundwater data until the proposed statistical methods are approved by the Board.

REPORT DUE DATE: September 1, 1997

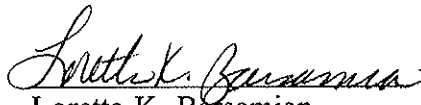
24. The dischargers are required to develop a landscaping irrigation plan. This plan must document the method of irrigation, volume of water being applied per each irrigation event, frequency of irrigation and include a soil moisture monitoring program. Implementation of such an acceptable program will preclude excessive water application, thus preventing leachate buildup in the landfill.

REPORT DUE DATE: May 24, 1996

25. The dischargers are required to make a general engineering and geotechnical survey of all waste parcels, and to locate those portions of the parcels which are not capped in accordance with the requirements of Section 2581, Article 8, Chapter 15 of Title 23 CCR.

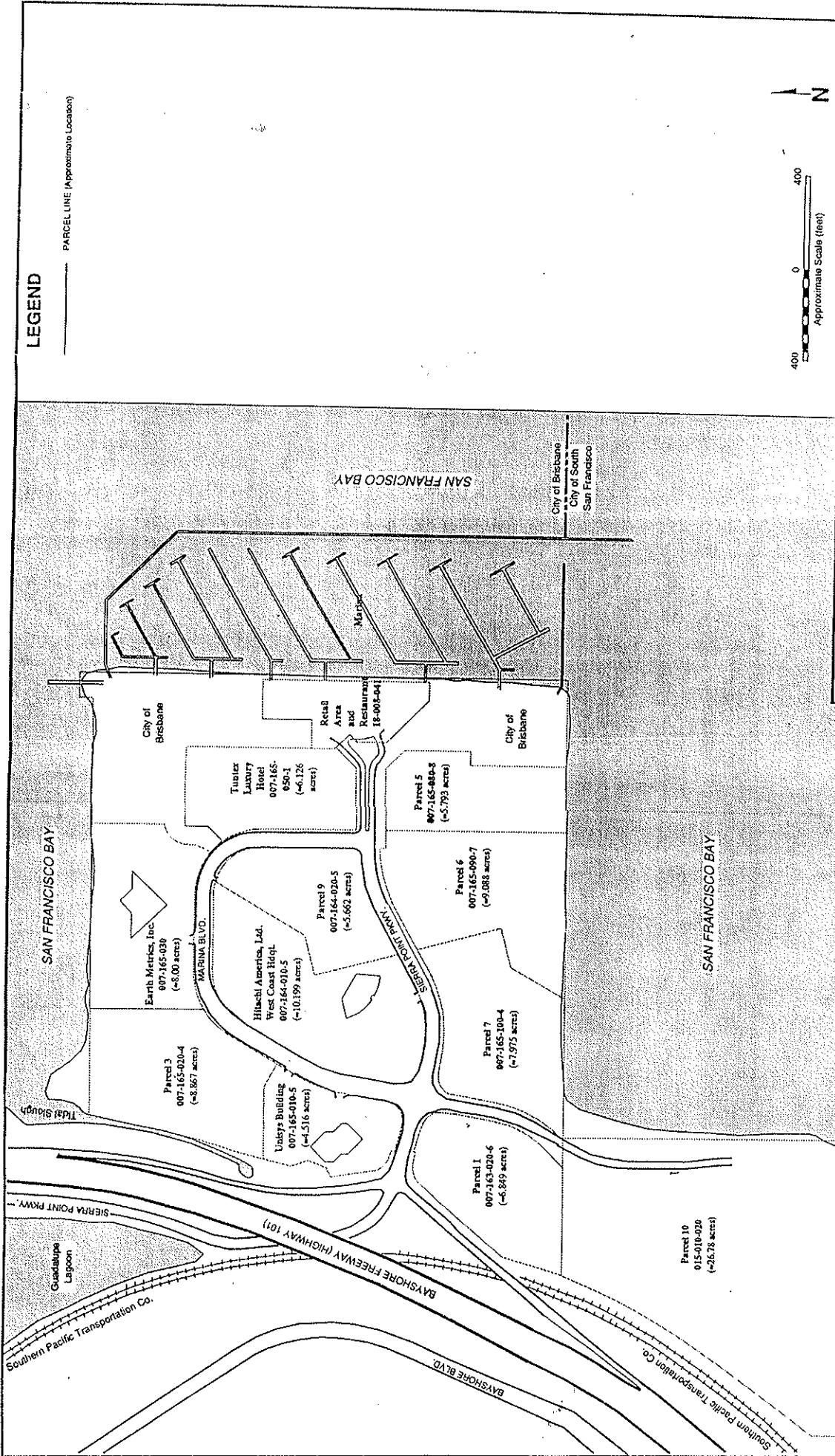
REPORT DUE DATE: September 1, 1996

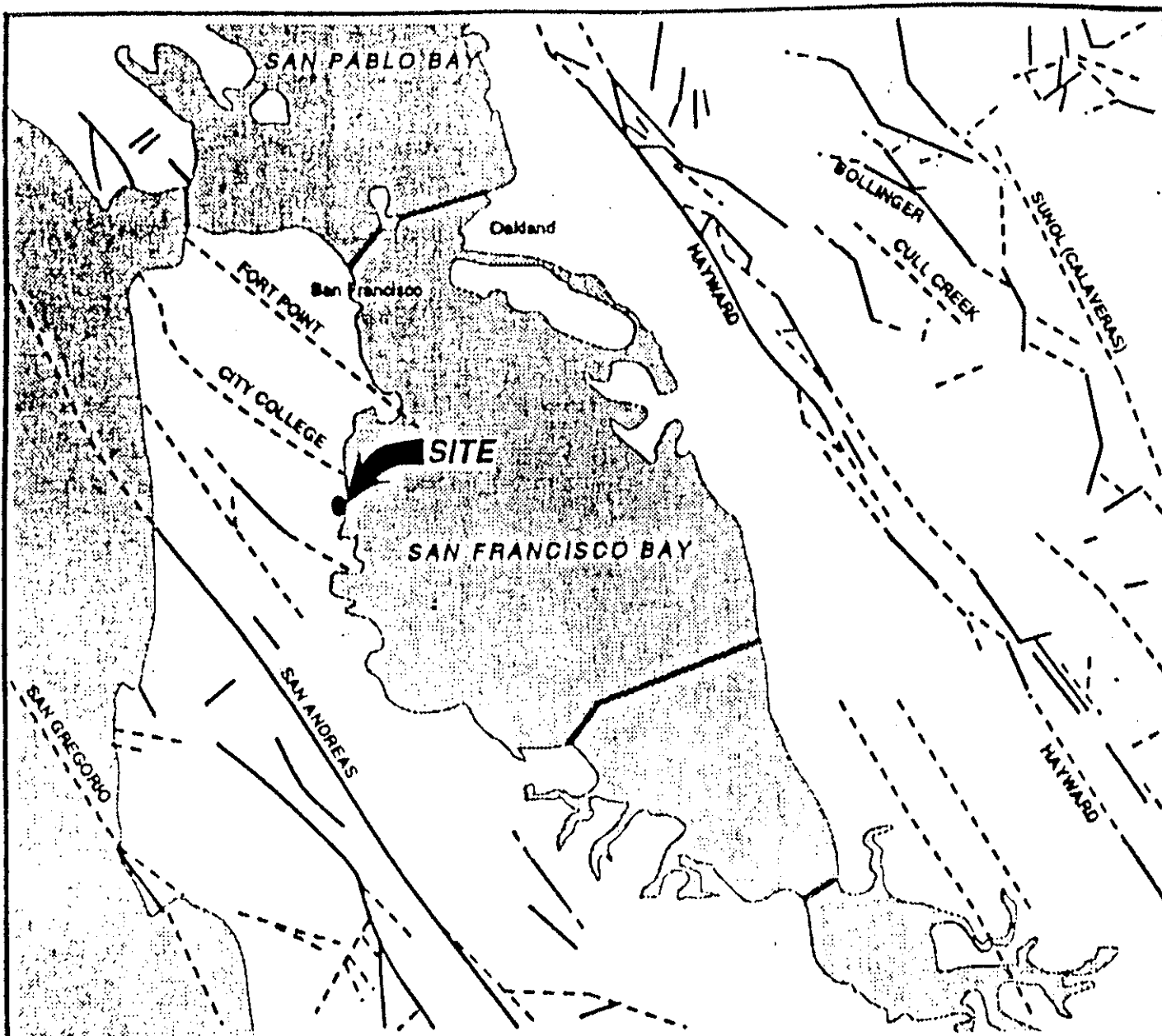
I, Loretta K. Barsamian Executive Officer, do hereby certify that the foregoing is a full, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, April 17, 1996.


Loretta K. Barsamian
Executive Officer

Attachments:

- A. Figures:
1. Site Location Map
2. Regional Fault Map
B. Discharge Monitoring Program

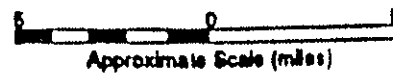




LEGEND

- OBSERVED FAULT
- - - - - INFERRED FAULT

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Based on Kahle and Goldman,
"Geologic Map of San Francisco Bay
Area," August 1966.

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KLEINFELDER

REGIONAL FAULT MAP

SIERRA POINT LANDFILL
BRISBANE, CALIFORNIA

PROJECT NUMBER 10-2196-03

Figure

No. 2

DRAFTED BY: L. Sue

DATE: 10-22-92

CHECKED BY: G. Jett

DATE: 10-23-92

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

SIERRA POINT DEVELOPMENT COMPANY, THE CITY OF BRISBANE, SIERRA
POINT ASSOCIATES ONE, SIERRA POINT ASSOCIATES TWO,
HITACHI AMERICA LTD., TUNTEX PROPERTIES INC., AND
ARGENTUMINTERNATIONAL, INC. SIERRA POINT CLASS III SOLID WASTE
DISPOSAL SITE BRISBANE, SAN MATEO COUNTY

ORDER NO. 96-058

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16. This Discharge Monitoring Program is issued in accordance with Provision C.5 of Regional Board Order No. 96-058

The principal purposes of a discharge monitoring program are:

- (1) to document compliance with waste discharge requirements and prohibitions established by the Board,
- (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge,
- (3) to develop or assist in the development of standards of performance, and toxicity standards,
- (4) to assist the discharger in complying with the requirements of Article 5, Chapter 15 as revised July 1, 1991.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and he/she or their authorized representative shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwater which pass over, through, or under waste materials or

contaminated soils. In this case, the groundwater beneath and adjacent to the landfill areas and the surface runoff from the site are considered receiving waters.

3. Standard observations refer to:

a. Receiving Waters

- 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
- 2) Discoloration and turbidity: description of color, source, and size of affected area.
- 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 4) Evidence of beneficial use: presence of water associated wildlife.
- 5) Flow rate.
- 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit

- 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on a map.)
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit

- 1) Evidence of ponded water at any point on the waste management facility.
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source
- 3) Evidence of erosion and/or daylighted refuse.
- 4) Standard Analysis (SA) and measurements are listed on Table 2 (attached).

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 2550.7(b)
2. Surface water per Section 2550.7(c) and per the general requirements specified in Section 2550.7(e) of Article 5, Chapter 15 and
3. Vadose zone per Section 2550.7(d). This item is neither feasible nor applicable for this landfill.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time of analyses, and name of the personal performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used where applicable; or reference to standard EPA methods.
5. Calculation of results.
6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written detection monitoring reports shall be filed by the 15th day of the month following the report period. In addition, an annual report shall be filed as indicated in F.3 below. The reports shall be comprised of the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge, the report is true, complete, and correct.

- b. Each monitoring report shall include a compliance evaluation summary. The

summary shall contain:

- 1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations. A statistical evaluation of the water quality monitoring data for all groundwater compliance points (As required under Part B. Table 1).
 - 2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field PH, temperature, and conductivity during purging, calibration of the field equipment, results of the PH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
 - 3) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualification of the person actually taking the samples, and any other observations.
- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.
- 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approval by the Executive Officer prior to use.
 - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; and explanation for any recovery rate that is outside of the normal range specified by the EPA for that method; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name of the person(s) performing the analyses.

- e. An evaluation of the effectiveness of the leachate monitoring or control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized. [This item will be in effect after the installation of a leachate collection and recovery system at the facility]
- f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
- g. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations. [Not applicable for this site]

2. CONTINGENCY REPORTING

- a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:
 - 1) a map showing the location(s) of discharge;
 - 2) approximate flow rate;
 - 3) nature of effects; i.e., all pertinent observations and analyses; and
 - 4) corrective measures underway or proposed.
- b. A report shall be made in writing to the Board within seven days of determining that a statistically significant increase occurred at a point of compliance (between a down gradient sample and a WQPS). Notification shall indicate what WQPS(s) has/have been exceeded. The discharger shall immediately re-sample at the compliance point where this difference has been found and reanalyze.
- c. If re-sampling and analysis confirms the earlier finding of a statistically significant increase between monitoring results and WQPS(s), the discharger must submit to the Board an amended Report of Waste Discharge as specified in Section 2550.8(k)(5) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 2550.9 of Chapter 15.
- d. Within 180 days of determining statistically significant evidence of a release, submit to the regional board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 2550.10. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. REPORTING

By January 31 of each year, the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a 5-1/4" or 3-1/2" computer data disk, MS-DOS ASCII format, tabulating the year's data.
- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
- c. A written summary of the groundwater analyses indicating any change in the quality of the groundwater
- d. An evaluation of the effectiveness of the leachate monitoring/control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

4. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each new sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

PART B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. ON-SITE OBSERVATIONS - Report Semi-annually

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 thru V-'n'	Located on the waste disposal area as delineated by a 500 foot grid network.	Standard observations for the waste management unit.	Semi-annually
P-1 thru P-'n' (perimeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the	Semi-annually

A map showing visual and perimeter compliance points (V and P stations) shall be submitted by the discharger in the semi-annually monitoring report.

B. GROUNDWATER, LEACHATE AND SURFACE WATER MONITORING

Report Semi-annually

Groundwater, surface water, Leachate and seepage monitoring points shall be monitored as outlined below on Table 1 and Table 2 and shown on Figure 1 (Attached).

During the wet season (October through April), estimate or calculate the volume of

storm water discharge from each outfall and collect and analyze samples of storm water discharge from two storm events during each wet season which produce significant storm water discharge as defined in State Water Resources Control Board Order No. 92-12-DWQ (General Permit for Storm Water Discharges). The samples must be analyzed for:

- pH, total suspended solids (TSS), specific conductance, and total organic carbon (TOC);
- Toxic chemicals and other pollutants that are likely to be present in storm water discharge in significant quantities.

TABLE 1

Monitoring Points For Each Monitoring Medium.:

MONITORING MEDIA	COMPLIANCE POINTS	UPGRADIENT POINTS
Surface water	Comply with the requirements of the General Industrial Storm Water Runoff Program	
Groundwater	Shallow Groundwater Wells: MW-1A, MW-2A, MW-4A, MW-5A, MW-7A, MW-9A, MW-11A, MW-13A Deep Groundwater Wells: MW-6B	Not identified
Leachate	Leachate Wells: L-1, L-2, L-3, L-6,* LW-1, * LW-2	Not Applicable
Seepage	S-1 through S-n	

* New leachate wells

Table 2 - Discharge Monitoring Plan, List of Analytical Parameters

Inactive Sierra Point Landfill

City of Brisbane

San Mateo county

Parameter	Medium	Method	Frequency ⁴	Reference
Leachate Extraction Rate	Leachate	Field	See Note 5	1
Leachate Level Measurements	Leachate	Field	Semi-annual	1
Water Level Measurements	Leachate & GW	Field	Semi-annual	1
Temperature Measurements	Leachate & GW	Field	Semi-annual	1
Electrical Conductivity	Leachate & GW	Field	Semi-annual	3
pH	All	Field	Semi-annual	3
Total Kjeldahl Nitrogen	Leachate & GW	351.2	Semi-annual	2
Turbidity	GW	Field	Semi-annual	1
Ammonia as N (non-ionized)	GW	350.1	Semi-annual	
Chemical Oxygen Demand	GW	410.4	Semi-annual	2
Total Dissolved Solids	GW	160.1	Semi-annual	2
Volatile Organic Compounds (Appendix I)	GW	8260	Semi-annual	3
Volatile Organic Compounds (Appendix I&II)	GW	8260	Once in 5 yrs ⁶	3
Appendix II Semi-volatile Organics Compounds	GW	8270	Once in 5 yrs	3
Organophosphorus	GW	8141	Once in 5 yrs	3
Pesticides & PCB's	GW	8080	Once in 5 yrs	3
Chlorinated Herbicides	GW	8150 w/ capillary column	Once in 5 yr	3
Arsenic	All	7061	Semi-annual	3
Barium	All	6010	Semi-annual	3

Parameter	Medium	Method	Frequency ⁴	Reference
Cadmium	All	7131	Semi-annual	3
Chromium	All	6010	Semi-annual	3
Copper	All	6010	Semi-annual	3
Lead	All	7421	Semi-annual	3
Mercury	All	7471	Semi-annual	3
Nickel	All	7520	Semi-annual	3
Selenium	All	7741	Semi-annual	3
Silver	All	6010	Semi-annual	3
Cyanide	All	9010	Semi-annual	3
Zinc	All	6010	Semi-annual	3

NOTES:

1. Not Applicable
2. Methods for Chemical Analysis of Water and Wastes, EPA600/4/79/029, revised March 1983
3. EPA SW-846
4. Winter/Spring Reporting Period: October 1 to March 31 (Samples to be collected between February 1 and March 31) report due by April 30.
Summer/Fall Reporting Period: April 1 to September 30 (Samples to be collected between August 1 and September 30) report due by October 30.
5. The leachate extraction rates shall be recorded weekly and reported as follows:
 - total weekly flow (gallons per week)
 - total quarterly flow (gallons)
 - total number of days the system was shutdown during the quarter
 - average pumping rate in gallons per minute (average gallons per minute)
 - total cumulative flow since system start up (gallons)
6. Once every 5 yrs beginning with the Winter/Spring Reporting Period report due by April 30, 1996.
7. Monitoring Media: GW=groundwater, All=leachate & GW.
Leachate analysis to be conducted on sample from leachate extraction system.
8. Alternative EPA-approved methods may be substituted for the above methods provided the alternative methods provide detection limits that are equal to or less than those attainable by the indicated method.
9. Metals samples shall be field filtered using a 5 micron filter.

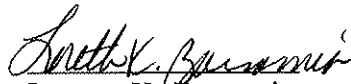
C. FACILITIES MONITORING

The discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report quarterly. The facilities to be monitored shall include, but not be limited to:

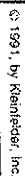
- a. Leachate collection and removal systems;
- b. Surface water monitoring points;
- c. Shallow and deep groundwater monitoring wells;
- d. Perimeter diversion channels;
- e. Leachate wells;

I, Loretta K. Barsamian Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

- 1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 96-058 .
- 2. Is effective on the date shown below.
- 3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.


Loretta K. Barsamian
Executive Officer

Date Ordered: April 17, 1996
Figure 1 - Monitoring Points Location map
Table 2 - Discharge Monitoring Plan



DRAFTED BY: L. Sue	DATE: 10-23-92
CHECKED BY: G. Jell	DATE: 10-23-92

Figure No. 1
Monitoring Points Location Map

PARCEL LINE (Approximate Location)

SURFURY WALL (Approximate Location)

INTERIOR LANDFILL DIME
(Approximate Location)

PERIMETER ZONE A
GROUND WATER MONITORING WELL

PERIMETER ZONE B
GROUND WATER MONITORING WELL

INTERIOR SHALLOW
GROUND WATER MONITORING WELL

INTERIOR SHALLOW
GROUND WATER MONITORING WELL
(Installed by Woodward-Clyde Consultants)

SOIL SAMPLING LOCATION
FOR BAY MUD CHARACTERIZATION

GROUND WATER SURFACE ELEVATION
(feet) AT WELL

INFERRED PIEZOMETRIC SURFACE
CONTOUR (feet, above mean sea level)

POTENTIAL GROUND WATER FLOW
DIRECTION

NOTE:
Contours for interior monitoring wells are based on the deeper well of each pair (i.e., L-2, L-3, and L-4).

